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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,370	02/15/2002	Shunpei Yamazaki	SEL 303	3685

7590 10/23/2003

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EXAMINER

COLON, GERMAN

ART UNIT PAPER NUMBER

2879

DATE MAILED: 10/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/077,370	YAMAZAKI ET AL.	
	Examiner	Art Unit	
	German Colón	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-12 and 16-18 is/are allowed.
- 6) ☒ Claim(s) 1-9, 13-15 and 19-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>0202</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I in Paper No. 0803 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2 and 6-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamazaki et al. (US 6,605,826).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 1, Yamazaki discloses a light-emitting device comprising (see Figs. 1A-1D):

an active matrix substrate over which a light emitting element having a thin film transistor is formed; a desiccant (see Col. 4, line 60); and a protective unit wrapping the active

matrix substrate (see Fig. 1C), wherein the protective unit is provided with a thin film comprising a rare gas element and a carbon. The Examiner notes that Yamazaki discloses the formation of a DLC film in a reaction chamber wherein Ar gas is introduced (see Col. 7, lines 5-7 and 17). As a result of the method of manufacture of said thin film comprising carbon, Ar gas will be present in the film as an impurity.

Regarding claim 2, Yamazaki discloses the light-emitting device having an anode, a cathode and an EL interposed therebetween.

Regarding claim 6, Yamazaki discloses the thin film containing carbon being a DLC film (see Col. 7, line 23).

Referring to claim 7, Yamazaki discloses the rare gas being Ar (see Col. 7, line 17).

Referring to claim 8, Yamazaki discloses the desiccant being BaO (see Col. 4, lines 63-64)).

Referring to claim 9, Yamazaki discloses the light-emitting device being used in at least one of a digital camera, personal computer and mobile phone (see Figs. 12A-12E).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-9, 13-15 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silvernail et al. (US 6,537,688) in view of Yamazaki et al. (US 6,191,492).

Regarding claim 1, Silvernail discloses a light-emitting device comprising:

an active matrix substrate over which a light-emitting element having a thin film transistor **140** is formed;

a desiccant (see Col. 5, lines 66-67); and

a protective unit **160** wrapping the active matrix substrate. Silvernail is silent regarding the protective unit being provided with a film comprising a rare gas and carbon.

However, Yamazaki discloses a device having a protective unit provided with a film comprising carbon with the purpose of preventing breakdown of the inner sections of the electronic parts and to prevent the permeation of external moisture into the interior of the device (see Col. 3, lines 7-13). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the protective unit of Silvernail with a film comprising carbon in order to prevent breakdown of the inner sections of the electronic parts and to prevent the permeation of external moisture into the interior of the device. The Examiner notes that Yamazaki discloses the formation of a DLC or silicon nitride film by a plasma process or CVD using an inert gas (see Col. 2, lines 45-47, Col. 4, lines 43-52, Col. 5, lines 8-13, and Col. 8, lines 57-58 in view of lines 31-35). As a result of the method of manufacture of said thin film comprising carbon, a rare gas will be present in the film as an impurity.

Regarding claim 2, Silvernail-Yamazaki discloses the light-emitting element having an anode, a cathode and an EL material.

Regarding claim 3, Silvernail-Yamazaki discloses the protective unit wrapping the active matrix substrate. The method of bringing the protective unit in contact with the substrate, i.e. by

vacuum press-fitting, is not germane to the issue of patentability itself. Therefore, this limitation has not been given patentable weight.

Regarding claim 4, Silvernail-Yamazaki discloses the film being covered with a thin film comprising carbon (see '492, Col. 3, lines 7-13).

Referring to claims 5 and 6, Silvernail-Yamazaki discloses the protective unit being provided with a thin film that mainly contains carbon (DLC) outside the film (see '492, Col. 3, lines 7-13 in view of '688, Fig. 3).

Referring to claim 7, Silvernail-Yamazaki discloses the rare gas being one of He, Ne, Ar, Kr and Xe (see '492, Col. 4, line 44).

Referring to claim 8, Silvernail-Yamazaki discloses the desiccant being BaO or CaO (see '688, Col. 5, line 67).

Referring to claim 9, Silvernail-Yamazaki discloses the light-emitting device being used in at least one of a personal computer, telephones, and mobile computer (see '688, Col. 1, lines 20-22).

Regarding claim 13, Silvernail discloses a light-emitting device comprising:
an active matrix substrate over which a light emitting element having a thin film transistor **140** is formed;
a desiccant (see Col. 5, lines 66-67); and
a protective unit **160** wrapping the active matrix substrate. Silvernail is silent regarding the protective unit being provided with a film comprising a rare gas and silicon nitride.

However, Yamazaki discloses a device having a protective unit provided with a film comprising silicon nitride with the purpose of preventing breakdown of the inner sections of the

electronic parts and to prevent the permeation of external moisture into the interior of the device (see Col. 3, lines 7-13). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the protective unit of Silvernail with a film comprising silicon nitride in order to prevent breakdown of the inner sections of the electronic parts and to prevent the permeation of external moisture into the interior of the device. The Examiner notes that Yamazaki discloses the formation of a DLC or silicon nitride film by a plasma process or CVD using an inert gas (see Col. 2, lines 45-47, Col. 4, lines 43-52, Col. 5, lines 8-13, and Col. 8, lines 57-58 in view of lines 31-35). As a result of the method of manufacture of said thin film comprising carbon, a rare gas will be present in the film as an impurity.

Regarding claim 14, Silvernail-Yamazaki discloses the desiccant being BaO or CaO (see '688, Col. 5, line 67).

Regarding claim 15, Silvernail-Yamazaki discloses the light-emitting device being used in at least one of a personal computer, telephones, and mobile computer (see '688, Col. 1, lines 20-22).

Referring to claims 22-25, claims 22, 23, 24 and 25 are rejected over the reasons stated in the rejection of claims 1, 7, 8 and 9, respectively.

6. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silvernail-Yamazaki as applied to claims 1 and 13 above, and further in view of Ashe et al. (US 5,731,048).

Regarding claim 19, Silvernail-Yamazaki discloses the claimed invention except for the limitation of the protective unit provided with an AlN film. Silvernail-Yamazaki discloses the film being made of silicon nitride or DLC.

However, Ashe discloses a protective layer for semiconductors formed by a CVD method, and teaches silicon nitride, DLC and AlN as art recognize equivalents for protective layers. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an AlN film, as disclosed by Ashe, instead of DLC or silicon nitride, as disclosed by Silvernail-Yamazaki, since Ashe discloses said films to be art recognize equivalent materials for protective layers.

Referring to claims 20-21, Silvernail-Yamazaki-Ashe discloses the desiccant being BaO or CaO (see '688, Col. 5, line 67) and the light-emitting device being used in at least one of a personal computer, telephones, and mobile computer (see '688, Col. 1, lines 20-22).

Allowable Subject Matter

7. Claims 10-12 and 16-18 are allowed.
8. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 10, the references of the Prior Art fail to teach or suggest the combination of the limitations as set forth in claim 10, and specifically comprising the limitation of "the protective unit being provided with a SO_xN_y film containing a rare gas".

Regarding claim 16, the references of the Prior Art fail to teach or suggest the combination of the limitations as set forth in claim 16, and specifically comprising the limitation of "the protective unit being provided with a AlN_xO_y film containing a rare gas".

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 703-305-5987. The examiner can normally be reached on Monday thru Friday, from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 703-305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

gc

Joseph Williams
Joseph Williams